AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of locating mobile stations within a mobile communication network including a plurality of mobile stations and a plurality of base stations, the method comprising the steps of:

performing measurements on signals communicated between at least three base stations and at least two mobile stations; and

locating the at least two mobile stations simultaneously using N number of equations,

wherein N = nm*nb +nm if a round trip time (RTT) to transmit a signal from one base station to a mobile station and receive the transmitted signal back from that mobile station is known for the at least two mobile stations, or N = nm*nb if the RTT for the one base station is not known for the at least two mobile stations,

wherein nm is a number of mobile stations to be located and nb is a number of base stations involved in locating the nm mobile stations, and

~~locating the at least two mobile stations simultaneously by minimizing a cost function, which is achieved by means of a sufficient number of equations,~~ wherein each equation comprises the location of a mobile station as a function of the location of a base station and the performed signal measurements.

2. (Original) The method of claim 1, wherein the performed signal measurements include

the reception time of signals communicated between said at least three base stations and said at least two mobile stations.

3. (Original) The method of claim 1, wherein the performed signal measurements include the Round Trip Time of signals communicated between said at least three base stations and said at least two mobile stations.

4. (Original) The method of claim 1, wherein the locations of the mobile stations are defined by co-ordinates of pre-determined dimensions.

5. (Original) The method of claim 4, wherein the locations of the mobile stations are defined by two co-ordinates.

6. (Original) The method of claim 4, wherein the locations of the mobile stations are defined by three co-ordinates.

7. (Original) The method of claim 4, wherein said sufficient number of equations is based on said pre-determined dimensions of the co-ordinates.

8. (Original) The method of claim 3, wherein said sufficient number of equations is based on the knowledge of said Round Trip Times.

9. (Original) The method of claim 1, wherein the number of simultaneously located mobile stations and the number of base stations being involved in said performed signal measurements are based on the knowledge of measured Round Trip Times and pre-determined dimensions of co-ordinates defining the locations of the mobile stations.

10. (Original) The method of claim 1, wherein said signal measurements are performed close enough in time such that clocks in the base stations have not drifted significantly in relation to each other.

11. (Original) The method of claim 10, wherein said signal measurements are performed within one minute.

12. (Currently Amended) A system for locating mobile stations within a mobile communication network including a plurality of mobile stations and a plurality of base stations, the system comprising:

at least two mobile stations,

at least three base stations,

means for performing measurements on signals communicated between the at least three base stations and the at least two mobile stations; and

means for locating the at least two mobile stations simultaneously using N number of equations,

wherein N = nm*nb +nm if a round trip time (RTT) to transmit a signal from one base station to a mobile station and receive the transmitted signal back from that mobile station is known for the at least two mobile stations, or N = nm*nb if the RTT for the one base station is not known for the at least two mobile stations,

wherein nm is a number of mobile stations to be located and nb is a number of base stations involved in locating the nm mobile stations, and

~~means for locating the at least two mobile stations simultaneously by minimizing a cost function, which is achieved by means of a sufficient number of equations,~~ wherein each equation comprises the location of a mobile station as a function of the location of a base station and the performed signal measurements.

13. (Original) The system of claim 12, wherein said performed signal measurements include

the reception time of signals communicated between said at least three base stations and said at least two mobile stations.

14. (Original) The system of claim 12, wherein said performed signal measurements include the Round Trip Time of signals communicated between said at least three base stations and said at least two mobile stations.

15. (Original) The system of claim 12, wherein the locations of the mobile stations are defined by co-ordinates of pre-determined dimensions.

16. (Original) The system of claim 15, wherein the locations of the mobile stations are defined by two co-ordinates.

17. (Original) The system of claim 15, wherein the locations of the mobile stations are defined by three co-ordinates.

18. (Original) The system of claim 15, wherein said sufficient number of equations is based on said pre-determined dimensions of the co-ordinates.

19. (Original) The system of claim 14, wherein said sufficient number of equations is based on the knowledge of said Round Trip Times.

20. (Original) The system of claim 12, wherein the number of simultaneously located mobile stations and the number of base stations being involved in said performed

signal measurements are based on the knowledge of measured Round Trip Times and pre-determined dimensions of co-ordinates defining the locations of the mobile stations.

21. (Original) The system of claim 12, wherein said signal measurements are performed close enough in time such that clocks in the base stations have not drifted significantly in relation to each other.

22. (Original) The system of claim 12, wherein said signal measurements are performed within one minute.